# Determination of Residual Plasticity in Tablets from Microcrystalline Cellulose

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## Abstract

Microcrystalline cellulose is an important pharmaceutical excipient. Ceolus KG 802 is one type of microcrystalline cellulose.

The aim of this Diploma thesis was the determination of plasticity in tablets from microcrystalline cellulose (Ceolus KG 802) and to valuate the influence of compression force on plasticity. The influence of both a type of microcrystalline cellulose and different compression conditions on the second section of the graph curve showing the relation of the plasticity to the compression force was investigated as well.

Test Xpert V9.01, Microsoft Excel and Origin Professional 7.5 were used for processing compaction data. The plasticity was determined from graphs showing the decreasing trend of force on the time. We used methods which were based on identification of maximum and minimum forces and then method which was based on valuation of the area. Considering to uncertainty in the scope of plasticity is the plasticity considered as a residual one.

We found that these three methods gave comparable results. We were able to distinguish two sections of the curve from graphs showing the relation of the plasticity to the compression force. The first section characterizes the phase of precompression the second one characterizes the plastic deformation of tablets. We also confirmed the influence of different compression conditions on the second section of the curve. There was minimal influence of type of microcrystalline cellulose.